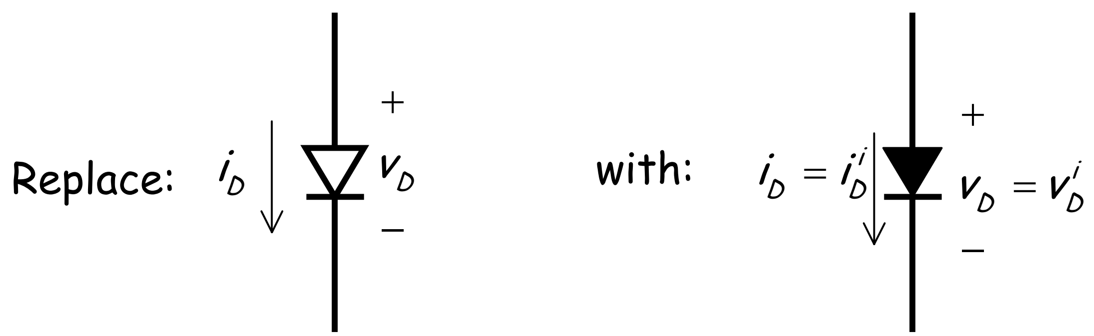
The Ideal Diode Model

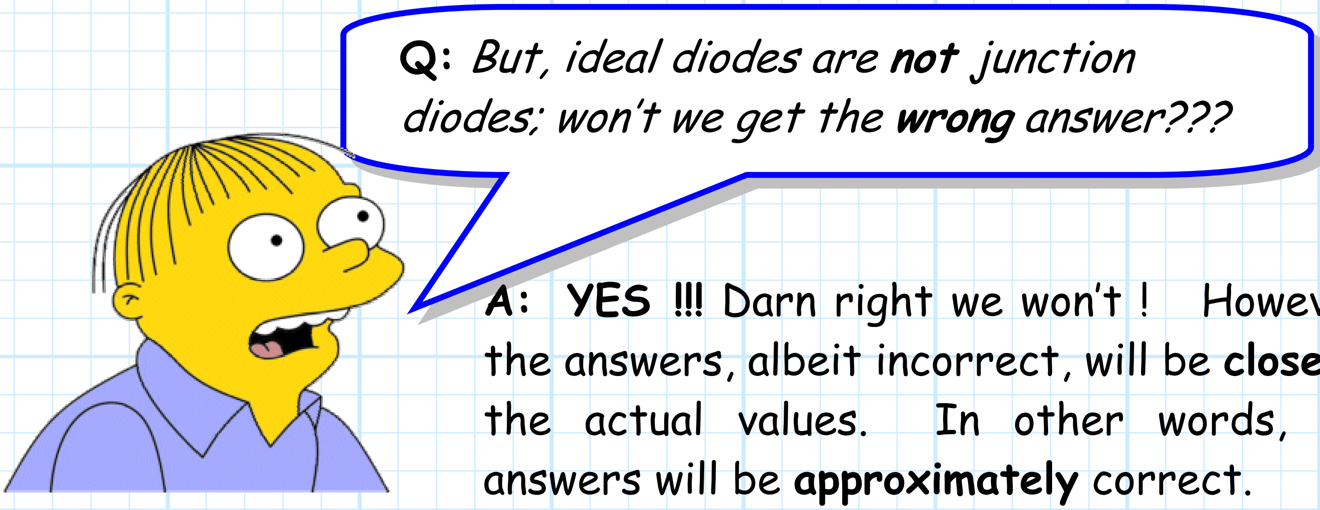
One way to analyze junction diode circuits is simply to **assume** the junction diodes are **ideal**. In other words:



We **know** how to analyze **ideal** diode circuits (recall sect. 3.1)!

IMPORTANT NOTE !!! PLEASE READ THIS CAREFULLY:

Make sure you analyze the resulting circuit **precisely** as we did in section 3.1. You **assume** the same **ideal** diode modes, you **enforce** the same **ideal** diode values, and you **check** the same **ideal** diode results, precisely as before. Once we replace the junction diodes with ideal diodes, we have an ideal diode circuit—**no junction diodes** are involved!



A: YES !!! Darn right we won't ! However, the answers, albeit incorrect, will be **close** to the actual values. In other words, our answers will be **approximately** correct.

We **approximate** a junction diode as an ideal diode.

➡ Our answers are therefore—**approximations !!**

For example, if using the ideal diode model we find that current $i_D = i_D^i > 0$, then the diode voltage determined will be $v_D = v_D^i = 0$. Of course, the **exact** solution will be some value closer to $v_D = 0.7$, so our answer has some **error**.